REMARKS

Claims 10 and 12 have been rejected under 35 USC 112, second paragraph, as being indefinite. Claims 10 and 12 have also been rejected under 35 USC 101 as being improper process claims. Claim 10 has been canceled by the above amendment and claim 12 has been rewritten in proper process format according to 35 USC 101 and in consonance with 35 USC 112, second paragraph. No new matter within the prohibition of 35 USC 132 has been added to the disclosure. Antecedent basis for the limitations added to claim 12 is found in the instant specification at page 9, lines 7-14.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. This version is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

Applicants accordingly request that the rejections of the instant claims under 35 USC 101 and 35 USC 112, second paragraph be withdrawn.

Claims 1-6 and 9-13 have been rejected under 35 USC 102(a) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Kimura, U.S. 5,714,612. Applicants first point out that claim 1, upon which the remaining claims 2-13 are all ultimately dependent, defines a process for preparing polyamides, which process comprises polymerizing starting monomers or starting oligomers in the presence of at least one compound of the formula I, as particularly set forth in claim 1. Claim 1 requires in the last paragraph thereof that the compound of the formula I is added to the starting monomers or to the polymerizing reaction mixture and becomes attached to

the polyamide through reaction of at least one of the amide-forming groups R^7. (See the recitation identifying the substituents in formula I of claim 1.)

Kimura relates to the stabilization of organic materials by incorporating a particular hindered piperidine compound into the organic materials (col. 1, lines 9-11). As an organic material polyamide is mentioned (col. 8, line 67). As is understood by the skilled artisan, Kimura discloses in col. 2, line 21-28 a method for stabilizing organic materials by blending them with a stabilizing amount of a specific compound. According to Kimura at col. 9, lines 42-44, a hindered piperidine compound is blended in a stabilizing amount with organic materials. This blending is also described in the bridging paragraph, col. 9, line 65 - col. 10, line 14. The meaning of the term "blending" is understood by the skilled artisan from the description of Kimura at col. 9, line 65 - col. 10, line 2, namely that in "blending the organic materials with the . . . compound of formula (I) . . . all the known methods and apparatus for obtaining a homogeneous mixture may be employed."

Therefore, Kimura teaches that the stabilizers according to his invention are blended with an organic material in a manner suitable to obtain a homogeneous mixture of the stabilizer and the organic material. This result is also supported by the fact that Kimura discloses not only polyamides as the organic material, but also other polymers, such as polyethylene and polypropylene which are able to form the mentioned homogeneous mixture with the stabilizers but clearly cannot react with the stabilizer, as they are inert. Moreover, the only actual examples showing the stabilizing

properties of Kimura's compounds have been carried out with polypropylene as the organic material. (See example 20, col. 15, lines 40-65 and example 22, col. 16, lines 1-65).

In sharp contrast, claim 1 defining the instant invention requires that the stabilizing moiety, viz., the compound of the formula I, becomes attached to the polyamide through reaction of at least one of the amide-forming groups R^7, i.e., by a chemical bonding. Since this requirement of all of the instant claims is not found in the disclosure of Kimura, Kimura does not anticipate the instant claims under 35 USC 102.

When a stabilizer is blended with a polyamide but is not attached thereto by chemical bonding (as in Kimura) undesirable effects are produced. See the instant specification at page 2, lines 17-18. Accordingly, Kimura neither discloses or suggests the instant process as claimed nor presents any expectation of the advantageous results obtained by employing a process such as the instant process. As both the suggestion of applicants' invention with an expectation of successful results must be found in the cited Kimura reference and not in applicants' disclosure, the instant subject matter as a whole is not obvious under 35 USC 103(a) in view of Kimura. Amgen Inc. v. Chugai Pharmaceutical Co., 18 USPQ 2d 1016, 1022 (Fed. Cir. 1991).

Claims 1-8 and 10-13 have been rejected under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Rody, U.S. 4,234,700. The examiner particularly asserts:

> Rody et al. discloses a HALS-stabilized polyamide wherein the HALS compound is built into the polyamide's backbone by its presence as a co-

> reactant during the polymer's condensation type polymerization . See. col. 1 - col. 5, line 3, and col. 11, line 56 et seq., particularly the HALS species N, `(2,2,6,6 tetramethylpiperidine 4-yl) hexamethylene diamine, bridging col. 12 and 13 as the diamine reactant with amide forming compounds. The polyamide may have an average molecular weight of 4,500 according to example 13 in col. 13. Such solid amide resinous materials are presumed to be capable of being extruded into sheets or being capable of being molded into shaped articles.

The skilled artisan understands Rody to disclose oligomeric and polymeric polyalkylpiperidine derivatives which can be used as light stabilizers for plastics (col. 1, lines 10-11 and 53-59). In col. 1, lines 58-59 Rody states in so many words that his stabilizers are not chemically incorporated into the plastics to be stabilized. Moreover, as seen in the Kimura reference discussed above, Rody discloses as plastics not only polyamides (bridging paragraph col. 61-62; col. 61, lines 61-65; col. 62, lines 24-30) but also polymers which cannot possibly react with the stabilizer, such as polyolefins (col. 61, lines 3-17). The only actual example of Rody showing the effect of employing his stabilizers, namely example 16, col. 68, line 37 - col. 69, line 10, is carried out with polypropylene as polymer. As a consequence, Rody does not anticipate the present invention as claimed under 35 USC 102(b). Furthermore, since Rody expressly states that his stabilizer should not be incorporated into the plastics to be stabilized, Rody teaches away from the instant invention as claimed. Accordingly, Rody does not render the instant invention as claimed obvious under 35 USC 103(a).

Further in respect of Rody, the examiner has taken the position that the stabilizers of Rody are themselves polyamides within the scope of the instant rejected

claims, citing example 13 at col. 66, line 36- col. 67, line 8. Example 13 describes the reaction of N, N-(2,2,6,6 tetramethylpiperidine 4-yl) hexamethylene diamine (cited by the examiner) with adipic acid chloride. Two products have been separated, namely one with an average molecular weight of 4,500 (col. 67, line 4) and another with an average molecular weight of 1,500 (col. 67, line 6). Both are named by Rody as a "polyamide" (col. 66, last line; col. 67, line 5). However, a careful analysis of this example reveals that one of the reaction products has the following formula molecular weight:

$$H\text{-}[C_{28}H_{52}N_4O_2]_n\text{-}OH$$

$$1 \qquad n*476 \qquad 17$$

For an average molecular weight of 1,500, n can be calculated as:

$$1 + n*476 + 17 = 1{,}500$$

$$n = 3.1$$

For the other product separated in example 13, n is calculated to be 9.4. This means that Rody is using the term "polyamide" for a compound with an average of only 3 to 9 repeating units.

From Ullmann's Encyclopedia of Industrial Chemistry, Vol. 21, 5th Edition, VCH Verlagsgesellschaft mbH, Weinheim Germany, 1992, p. 182, left col. paragraph 2.1 (copy attached as Attachment A) it is known that using P as the number of monomers in the polymer chain (corresponding to the above mentioned "n"), and M as number-average molecular mass (corresponding to the average molecular weight used by

Rody) the low end of the range of useful M_n values is 11300, leading to a P_n value in the case of Polyamide 6 and 66 of 100. Since the average molecular weight, as well as the number of monomers in the compounds of the Rody reference, are nowhere near the values commonly used in the field of polyamides, the compounds of Rody are not polymers but are instead oligomers (as also described by Rody in col. 1, line 55). Since the process disclosed by Rody in example 13 is a process well known for the manufacturing of polyamides but only leads to oligomers and not to polymers, Rody is not disclosing or suggesting to a person skilled in the art to manufacture polyamides according to the instant invention.

Finally, the examiner's presumption that Rody's solid amide resinous materials should be capable of being extruded into sheets, or being capable of being molded into shaped articles, is a fully unsupported assumption. To the contrary, Rody clearly discloses that the stabilizers are incorporated into plastics (col. 62, lines 28-33) so that the shaped articles made from the resulting mixture contain the mentioned plastics and not the stabilizers.

Since Rody does not disclose or suggest the instant process as claimed, or its attending advantages and benefits, the disclosure of Rody when taken as a whole for what it reasonably teaches the skilled artisan, does not render obvious the instantly claimed subject matter.

Claims 1-8 and 10-13 have been rejected under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as being obvious over

German published application No. 3233953 (Rombusch et al.).

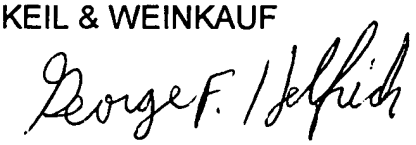
Rombusch discloses carbonamide groups-containing shaped articles with improved light stability containing a specific amount of 2,2,6,6 tetramethylpiperidine derivatives. These derivatives include compounds with and without amide forming groups. Such derivatives can be added in all stages of the polymerization, which, however, is described only in very general terms (page 5, lines 21-25). Moreover, the disclosure of Rombusch is understood by the skilled artisan in light of the common knowledge in the art at the time of the instant invention. In this regard, it is significant that the actual Rombusch examples only describe derivatives without amide forming groups, which are added only after the polymerization. In view of these examples and the general nature of Rombusch's disclosure one of skill in the art at the time of applicants' invention would not be pointed toward the instant subject matter as a whole. Moreover, Rombusch dos not provide sufficient disclosure enabling a person skilled in the art to manufacture the instant polyamides. (In this regard, it is noted that Rody discloses a process commonly used in the manufacture of polyamides, which however only leads to lower oligomers, and not to polyamides.) Because Rombusch does not disclose and enable the instant invention as claimed, the instant invention is not anticipated by Rombusch. Because Rombusch does not contain any teaching which would motivate the skilled artisan to modify the art existing at the time of applicants' invention so as to arrive at the instant subject matter as a whole, the instant subject matter as a whole is not obvious in view of Rombusch.

CONCLUSION

Based on the above amendment and remarks, applicants submit that the instant application is in condition for allowance. Early action to this end is requested.

Respectfully submitted,

KEIL & WEINKAUF



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

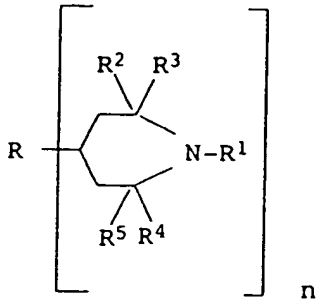
IN THE CLAIMS

Claim 10 has been canceled.

12. (amended) [The use of a polyamide as claimed in claim 11] A process for preparing filaments[,] and fibers, [films, sheetlike structures and moldings] which process comprises melt spinning a polyamide as claimed in claim 11.

CLAIMS IN THE CASE - OZ 48876

1. A process for preparing polyamides, which comprises polymerizing starting monomers or starting oligomers in the presence of at least one compound of the formula (I)



(I)

R is a C_1-C_{20}- aliphatic saturated hydrocarbon R^8 which bears 1-4 identical or different amide-forming groups R^7,

R^1 is H, C_1-C_{20}-alkyl, cycloalkyl, benzyl or OR^6, where

R^7 is elected from the group consisting of -(NHR^9), carboxyl and carboxylic acid derivatives, R^9 being H, alkyl having from 1 to 8 carbon atoms, cycloalkyl having from 3 to 10 carbon atoms or alkylene having from 2 to 20 carbon atoms,

R^2, R^3, R^4 and R^5 are independently C_1-C_{10}-alkyl,

n is a natural number greater than 1,

the piperidine derivatives attached to R being identical or different with regard to the substitutents, meaning R^1, R^2, R^3, R^4 and R^5,

wherein the compound of the formula I is added to the starting monomers or to the polymerizing reaction mixture and becomes attached to the polyamide through reaction of at least one of the amide-forming groups R^7.

2. A process as claimed in claim 1, wherein the piperdine derivatives attached to R are identical with regard to the substituents, meaning R^1, R^2, R^3, R^4 and R^5.

3. A process as claimed in claim 1, wherein R^1 is H.

4. A process as claimed in claim 1, wherein the R^2, R^3, R^4 and R^5 substituents on any one piperidine derivative are identical.

5. A process as claimed in claim 1, wherein R^2 on any one piperidine derivative is methyl.

6. A process as claimed in claim 1, wherein n is 2.

7. A process as claimed in claim 1, wherein R is a group of the formula - NH - R^8 - NH - where R^8 is alkylene having form 1 to 20 carbon atoms.

8. A process as claimed in claim 1, wherein R is - NH - CH_2 - CH_2 - CH_2 - CH_2 - CH_2 - CH_2 - NH -.

9. A process as claimed in claim 1, wherein the polymerizing is carried out in the presence of at of at least one pigment.

11. A polyamide obtainable by a process as claimed in claim 1.

12. A process for preparing filaments and fibers, which process comprises melt spinning a polyamide as claimed in claim 11.

13. Filaments, fibers, films, sheetlike structures and moldings comprising a

polyamide as claimed in claim 11.